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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,404	09/16/2003	Xiang-Dong Yin	70566-0016	9674

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WASHINGTON, DC 20005

EXAMINER

JOYNER, KEVIN

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/662,404

Applicant(s)

YIN ET AL.

Examiner

Kevin C. Joyner

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-7 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 5-7 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 13, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schraner et al. (U.S. Patent No. 2,490,547) in view of Glucksman (U.S. Publication No. 2004/0004299) and Iguchi et al. (U.S. Patent No. 5,350,901).

Schraner discloses a steam on demand generator comprising a cup assembly including a closed bottom thin walled cup formed by a thin side wall and a bottom wall connected to the side wall and a cap, the side wall, bottom wall, and cap forming the interior, a heating device for heating the cup assembly and an interior thereof, a water

injection device (4) comprising a hollow cone spray nozzle arranged in the cap capable of supplying water to the side wall of the cup assembly, and a steam outlet (6), wherein the water is capable of being supplied in quantities so that the interior of the cup assembly remains essentially dry during steam generation (Figures 1 and 2; column 1, lines 40-55; column 2, lines 1-55; column 3, lines 1-25). Schraner does not appear to disclose the type of material from which the cup and cap are made. However, it is well known in the art of steam generators to form the assembly from a material such as stainless steel in order to resist corrosion. Iguchi provides one such example of this wherein the reference discloses a steam on demand generator that is provided with a stainless steel coating in order to resist corrosion and permit magnetic flux (column 2, lines 11-25; column 4, lines 10-20). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Schraner to form the cup and cap from stainless steel in order to resist corrosion as exemplified by Iguchi. Schraner does not appear to disclose a temperature sensor or that the heating device and an end portion of said temperature sensor are brazed to the side wall of the cup. Glucksman discloses a steam on demand generator located in a humidifier. Said generator comprises a cup (61) and cap (63), a temperature sensor (81), and a heating element (70). Said sensor is provided in order to prevent said generator from over heating (paragraph 54). The reference continues to disclose that an end portion of said sensor contacts the wall of the cup wherein a side tip of the sensor directly contacts the side wall and a tip end remains exposed; and that the heating device is a heating coil that contacts and surrounds a lower portion of the cup assembly (concerning claim 5;

disclosed in claims 5 and 6 as well as Figure 4 of Glucksman), wherein the preferential treatment for securing said contact is by a brazing technique (paragraph 50) in order to ensure a good heat transfer path. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Schraner to include a temperature sensor in order to prevent said generator from over heating as exemplified by Glucksman. Furthermore, it would have also been obvious to one of ordinary skill in the art to contact the heating device and an end portion of the temperature sensor to the side wall of the cup by a method of brazing in order to ensure good heat transfer and accurate temperature measurement as exemplified by Glucksman as well. Regarding claims 3, as disclosed above, Glucksman discloses that a side tip of the temperature sensor directly contacts the side wall and a tip end surface remain exposed after brazing as shown in Figure 4. The temperature sensor of Glucksman is a thermostat (paragraph 54) and not a thermocouple; however a thermostat is a functionally known equivalent temperature sensing means. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute a thermocouple for the thermostat in the steam generator disclosed by Schraner in view of Glucksman, as such is known as a functionally equivalent alternative.

4. Claims 6, 7, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schraner et al. (U.S. Patent No. 2,490,547) in view of Glucksman (U.S. Publication No. 2004/0004299), Morgandi (U.S. Patent No. 6,067,403) and Iguchi et al. (U.S. Patent No. 5,350,901).

Schraner discloses a steam on demand generator comprising a cup assembly including a closed bottom thin walled cup formed by a thin side wall and a bottom wall connected to the side wall and a cap, the side wall, bottom wall, and cap forming the interior, a heating device for heating the cup assembly and an interior thereof, a water injection device (4) comprising a hollow cone spray nozzle arranged in the cap capable of supplying water to the side wall of the cup assembly, and a steam outlet (6), wherein the water is capable of being supplied in quantities so that the interior of the cup assembly remains essentially dry during steam generation (Figures 1 and 2; column 1, lines 40-55; column 2, lines 1-55; column 3, lines 1-25). Schraner does not appear to disclose the type of material from which the cup and cap are made. However, it is well known in the art of steam generators to form the assembly from a material such as stainless steel in order to resist corrosion. Iguchi provides one such example of this wherein the reference discloses a steam on demand generator that is provided with a stainless steel coating in order to resist corrosion and permit magnetic flux (column 2, lines 11-25; column 4, lines 10-20). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Schraner to form the cup and cap from stainless steel in order to resist corrosion as exemplified by Iguchi. Schraner does not appear to disclose a temperature sensor or that the heating device and an end portion of said temperature sensor are brazed to the side wall of the cup. Glucksman discloses a steam on demand generator located in a humidifier. Said generator comprises a cup (61) and cap (63), a temperature sensor (81), and a heating element (70). Said sensor is provided in order to prevent said generator from over

heating (paragraph 54). The reference continues to disclose that an end portion of said sensor contacts the wall of the cup wherein a side tip of the sensor directly contacts the side wall and a tip end remains exposed; and that the heating device is a heating coil that contacts and surrounds a lower portion of the cup assembly (Figure 4 of Glucksman), wherein the preferential treatment for securing said contact is by a brazing technique (paragraph 50) in order to ensure a good heat transfer path. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Schraner to include a temperature sensor in order to prevent said generator from over heating as exemplified by Glucksman. Furthermore, it would have also been obvious to one of ordinary skill in the art to contact the heating device and an end portion of the temperature sensor to the side wall of the cup by a method of brazing in order to ensure good heat transfer and accurate temperature measurement as exemplified by Glucksman as well. Schraner in view of Glucksman do not appear to disclose a stainless steel stud brazed to a bottom of the stainless steel cup, the stud providing a channel for the temperature sensor to enter the interior. Morgandi discloses an on demand steam generator comprising a heating device (7) for heating the generator, a water injection device (6) for supplying water to the generator, a steam outlet (9A) and a temperature sensor (12) positioned within the generator. Morgandi also discloses that a stud is brazed to a bottom of the cup, the stud providing a channel for the temperature sensor to enter the interior. More specifically as disclosed in column 4 lines 31-36; the two endpieces are studs that are found at the bottom of a cup. The endpieces are referred to being welded to the cup and temperature sensor, wherein

brazing is a form of welding (column 4, lines 14-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the steam generator of Brutti to include a stud brazed to the bottom of the cup in order to provide a channel for the temperature sensor as exemplified by Morgandi as is an efficient and effective way to connect the stud to the cup and allow the sensor access to the inside of the cup. More specifically, the apparatus of Schraner does not appear to disclose that the heating coils are located on the outside of the cup or the limitations of the temperature sensor. However, Glucksman teaches these limitations. A suitable position for the temperature sensor of Glucksman is connected to the wall, wherein brazing is the preferential connecting means. The sensor is provided in order to deter the apparatus from overheating. Glucksman also teaches providing a heating coil to the outside of the cup connected by brazing means. This location is extremely well known in the art and conventional wherein Glucksman discloses connecting the coil to the cup by brazing in order to provide efficient heat transfer materials. Schraner in view of Glucksman does not appear to disclose a stud provided in the bottom of the cup. Morgandi provides this teaching wherein the stud is brazed to the temperature sensor. The stud provides a ball valve that allows air passage to the generator to prevent a vacuum effect when said generator is cooled. Therefore, one of ordinary skill would be motivated to combine the teaching of each reference for the specific reasons as stated forth above.

Regarding claim 18, Schraner discloses a steam on demand generator comprising a cup assembly including a closed bottom thin walled cup formed by a thin

side wall and a bottom wall connected to the side wall and a cap, the side wall, bottom wall, and cap forming the interior, a heating device for heating the cup assembly and an interior thereof, a water injection device (4) comprising a hollow cone spray nozzle arranged in the cap capable of supplying water to the side wall of the cup assembly, and a steam outlet (6), wherein the water is capable of being supplied in quantities so that the interior of the cup assembly remains essentially dry during steam generation (Figures 1 and 2; column 1, lines 40-55; column 2, lines 1-55; column 3, lines 1-25). Schraner does not appear to disclose the type of material from which the cup and cap are made. However, it is well known in the art of steam generators to form the assembly from a material such as stainless steel in order to resist corrosion. Iguchi provides one such example of this wherein the reference discloses a steam on demand generator that is provided with a stainless steel coating in order to resist corrosion and permit magnetic flux (column 2, lines 11-25; column 4, lines 10-20). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Schraner to form the cup and cap from stainless steel in order to resist corrosion as exemplified by Iguchi. Schraner does not appear to disclose a temperature sensor or that the heating device and an end portion of said temperature sensor are brazed to the side wall of the cup. Glucksman discloses a steam on demand generator located in a humidifier. Said generator comprises a cup (61) and cap (63), a temperature sensor (81), and a heating element (70). Said sensor is provided in order to determine the temperature of the wall of the cup and prevent said generator from over heating (paragraph 54). The reference continues to disclose that an end portion of

said sensor contacts the wall of the cup wherein a side tip of the sensor directly contacts the side wall and a tip end remains exposed; and that the heating device is a heating coil that contacts and surrounds a lower portion of the cup assembly (Figure 4 of Glucksman), wherein the preferential treatment for securing said contact is by a brazing technique (paragraph 50) in order to ensure a good heat transfer path. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Schraner to include a temperature sensor in order to prevent said generator from over heating as exemplified by Glucksman. Furthermore, it would have also been obvious to one of ordinary skill in the art to contact the heating device and an end portion of the temperature sensor to the side wall of the cup by a method of brazing in order to ensure good heat transfer and accurate temperature measurement as exemplified by Glucksman as well. Schraner in view of Glucksman does disclose that the temperature sensor is utilized to determine the temperature of the inside wall (paragraph 54 of Glucksman) wherein said sensor is brazed so that a tip end surface remains exposed after brazing while a tip end surface directly contacts the wall (paragraph 54 of Glucksman; Figure 4), but does not appear to disclose that the sensor is located on an inside portion of the wall so that the temperature of the water inside the cup can be sensed as well. Morgandi discloses an on demand steam generator comprising a heating device (7) for heating the generator, a water injection device (6) for supplying water to the generator, a steam outlet (9A) and a temperature sensor (12) positioned within the generator. The reference continues to disclose that the sensor is located on an inside portion of the wall so that the temperature of the water inside the

cup can be sensed as well (Figure 2; column 4, lines 10-25). The sensor is provided in order to accurately determine the temperature of the water in the apparatus and appropriately add more if necessary (column 2, lines 20-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Schraner in view of Glucksman to provide the temperature sensor at a location on an inside portion of the wall so that the temperature of the water inside the cup can be sensed and appropriately add more if necessary as exemplified by Morgandi.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 3 and 5 filed on September 5, 2007 have been considered but are moot in view of the new ground(s) of rejection.

The Applicant's principle argument is:

(a) Brutti [nor any of the other cited references] teach the claimed temperature sensor and its mounting to the stainless steel thin wall.

The argument is moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin C. Joyner whose telephone number is (571) 272-2709. The examiner can normally be reached on M-F 8:00-4:30.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCJ



GLADYS JP CORCORAN
SUPERVISORY PATENT EXAMINER